



## Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact [support@jstor.org](mailto:support@jstor.org).

differences in color of the magnesite or from variations of amounts of serpentine and other minerals present. The strike of the bands and lenses is parallel to that of the Grenville sediments. The deposits have been intensely faulted and crumpled and probably the lenticular structure is the result of deformation. The mode of occurrence of the following minerals associated with the deposits is described: magnesite, serpentine, dolomite, diopside, phlogopite, quartz, talc, pyrite, sphalerite, magnetite, and graphite.

The three methods of origin for magnesite deposits are: (1) deposits formed by the decomposition of serpentine, (2) sedimentary deposits, (3) deposits formed by the replacement of limestone. The Grenville deposits are thought to have been formed by the replacement of limestone. Silication of limestone to diopside and phlogopite is very common along the contacts of limestone and igneous rocks in this region and the igneous rocks are very close to these particular deposits. The writer summarizes the method of origin: "The probable order of events by which the magnesite deposits of the Grenville district were formed was as follows: (1) silication of the limestone to diopside and the formation of phlogopite in places, (2) formation of serpentine in places, (3) replacement of limestone by dolomite, (4) replacement of dolomite by magnesite, and (5) the alteration of diopside to serpentine."

Chapter iv is a detailed description of the properties and gives tabulated descriptions of many magnesite samples with the percentage of CaO. While dolomite and magnesite are very intimately intermingled, yet by 1916 development work had proved the presence of 686,900 tons of magnesite containing less than 12 per cent CaO and 483,700 tons containing over 12 per cent CaO.

Map 1680 issued in 1919 shows in detail the geology of a portion of the township surrounding the deposits.

J. F. W.

---

*Pleistocene Marine Submergence of the Hudson, Champlain and St. Lawrence Valleys.* By HERMAN L. FAIRCHILD. New York State Museum Bulletins, Nos. 209, 210, Albany, N.Y., 1919. Pp. 76, pls. 25.

This is the closing paper by Professor Fairchild on the glacial and post-glacial waters of New York State and in it he discusses the proof and extent of the marine submergence following the retreat of Wisconsin glacial ice from northern New York State. The stratified clay and

sand in these valleys, the cobble bars, the wave-cut terraces, the deltas, and many other evidences of high-level standing water, with no known barriers to hold this water in, is strong evidence that the land in this region once stood below sea-level. This marine shore line has been uplifted and tilted and is now less than 100 feet above sea-level a short distance north of New York City and 740 feet above sea-level at Covey Hill on the International boundary, a distance of about 350 miles. Diagrams are given to show the profile of this tilted marine shore line and also the shore line of Lake Iroquois, the last of the glacial lakes to occupy the Ontario basin. In the St. Lawrence-Ontario basin the Iroquois plane is 290 feet above the marine plane and thus when one is found in the field it is easy to locate the position of the other. Also knowing the present elevation of these two planes and the total amount of uplift of the region, the amount of either glacial or post-glacial uplift can easily be determined. From numerous measurements and calculations of this sort it appears that northern New York State was not raised as a rigid body but by a progressive wave movement, as the southern side of Iroquois basin received one-half its total uplift during Iroquois time while the northern end of the same basin received very little uplift until after Iroquois time. The uplift of the land seems to have been wavelike and to have followed the margin of the retreating ice front.

Detailed descriptions of shore features in the various sheets along the Hudson, Champlain, and St. Lawrence valleys and the Ontario basin are given. The shore features at Covey Hill, the point of junction of the Champlain and St. Lawrence valleys and of the Champlain marine waters and the Lake Iroquois waters, are described in detail. Some of these shore features are at present somewhat above what the level of the water should have been at these particular localities. Many complications probably enter the Pleistocene history as there may have been many up-and-down land movements and the present height of the summit plane above the sea must represent only the excess of land uplift over the rise of the ocean surface and the arithmetical sum of all the up-and-down movements.

A large number of photographs are inserted to show summit shore features and at the end of the report a classified bibliography is given. This report summarizes in a very thorough and clear manner Professor Fairchild's interpretation of the various glacial and post-glacial deposits and physiographic features of this region.

J. F. W.